

Analysis of Media Agenda Setting During and After Hurricane Katrina: Implications for Emergency Preparedness, Disaster Response, and Disaster Policy

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Media agenda setting refers to the deliberate coverage of topics or events with the goal of influencing public opinion and public policy. We conducted a quantitative content analysis of 4 prominent newspapers to examine how the media gathered and distributed news to shape public policy priorities during Hurricane Katrina.

The media framed most Hurricane Katrina stories by emphasizing government response and less often addressing individuals' and communities' level of preparedness or responsibility. Hence, more articles covered response and recovery

than mitigation and preparation. The newspapers studied focused significantly more on government response than on key public health roles in disaster management.

We discuss specific implications for public health professionals, policymakers, and mass media so that, in the future, coordination can be enhanced among these entities before, during, and after disasters occur. (*Am J Public Health*. 2008;98:604–610. doi:10.2105/AJPH.2007.112235.)

AS NATURAL AND HUMAN-

produced disasters increase

around the world, public health messages promoting local preparedness and coordinating expert planning efforts are increasingly important. The goal of public health disaster preparedness and response is for individuals and communities to "take simple steps to ensure that they have a supply of food, water and medicine, a reliable first aid kit, and a plan to find loved ones if communication and transportation networks are disrupted."2 Ironically, the importance of this message is convincingly conveyed by the media and others during and

after the disaster but is avoided before the event.

In addition, the media tends to emphasize different priorities according to the type of disaster or the individuals affected.3 For example, in comparison with the response to an earthquake, the response to a hurricane generally "lacks a well-organized community policy and thus basically consists of ad hoc disaster relief episodes."3(p51) This situation often results in a media-driven disaster policy that highlights deficiencies in the delivery of relief rather than local preparedness and national coordination efforts.



The ability of the mass media to set the agenda for public discussion is known as agenda setting. Agenda setting influences public agendas and policies through deliberate coverage of events and issues, with the media prompting policymakers to take action and satisfy the public's interest or demand for answers.³

The media engenders public awareness and concern on the basis of the assumptions that (1) the press and the media do not reflect reality but, rather, filter and shape it, and (2) media concentration on a few issues and subjects leads the public to perceive those issues and subjects as more important than others.4-6 During Hurricane Katrina, the media's agenda-setting role was often advanced through investigations on the part of prestigious newspapers, including the New York Times and the Washington Post,7-9 which created public interest and a convergence of common priorities.10

Despite criticisms of the media's handling of Hurricane Katrina (exaggerating lawlessness, tolerating racial profiling, and underreporting disaster management), the media played a historic role by pushing the government to take action, thus prompting a country of diverse citizens to reflect on natural disasters in their own communities. 11,12 However, the media's coverage of disasters should equally emphasize disaster mitigation and preparation. Ideally, the media should focus on these public health perspectives throughout all phases of a disaster to aid lawmakers and the

public in developing and supporting policies founded on evidencebased public health disaster management practices.

In addition, reporting on analyses of current and proposed disaster policies can help increase understanding of their potential impact. Thus, knowledge regarding how the media gathers and distributes the news is important in understanding and shaping agenda-setting and public policy priorities in natural disasters. ^{6,13}

We examined media agenda setting by reviewing local, state, and national newspaper articles on Hurricane Katrina. We explored how media agenda setting supports public health disaster management practices (mitigation, preparation, response, recovery) and assessed whether the media advanced policies shaping how state governments and the federal government respond to hurricanes.

METHODS

Newspaper Selection

We selected articles from 4 major newspapers representing local, state, and national populations: the Times Picayune, the Advocate, the Washington Post, and the New York Times. The New York Times and the Washington Post are among the top 5 newspapers circulated daily in the United States and are widely distributed to members of the US Congress and their staffs. Both the Times *Picayune* and the *Advocate* are locally circulated newspapers in Louisiana that also reach the public and policymakers.

We used the ProQuest search engine to identify news articles.

Boolean expressions used for article identification included "hurricane" and "Katrina" in headlines and leads. The National Weather Service began issuing warnings within the week prior to Hurricane Katrina making landfall on the Gulf Coast. Hence, we selected articles beginning August 25, 2006, with the first mention made of the hurricane possibly affecting the Gulf Coast, through September 25, 2006, to look for thematic changes and trends as the disaster response evolved. ProQuest provided the means to save and retrieve all identified articles. Articles that made only minimal reference to the storm (e.g., obituaries, indexes, and news briefs) were excluded from the sample.

Data Retrieval

Two trained coders conducted a content analysis of the newspaper articles. The primary researchers explained the purpose of the study and trained the coders by selecting sample newspaper articles and demonstrating how to code the content of each article. These articles were then recorded into a Microsoft Access (Microsoft Corp, Redmond, Wash) database.

Coding Categories

We used several categories in coding articles. For example, we coded articles into various subject categories—preparation, mitigation, response, and recovery—based on disaster management principles. Death or injury and destruction categories were added to capture the range of

content in the articles. Articles that predominantly discussed a single disaster subject (e.g., response) were coded as having a primary focus; those that addressed more than 1 subject category were coded as having a secondary focus. Each article was coded using a Microsoft Access database by newspaper name, date, article placement, article length, framing (episodic frame, thematic frame, or both), public health response (death or injury, destruction, health and information, mitigation, preparation, response, recovery), taking responsibility or accountability, need to take responsibility or accountability, and disaster policy.

We also coded articles according to the media's asserted level of responsibility (or accountability) for action on the part of individuals, local organizations (not for profit and for profit), local governments, state governments, and the federal government. A code of "not applicable" was assigned if the article did not specify a responsible party. If articles gave attention to more than 1 entity (e.g., local government and state government), they were coded in both categories. In the context of responsibility, articles were further coded for tone (negative, neutral, positive). For instance, an article was coded as having a negative tone if it was critical of those to whom responsibility was attributed. Articles were coded as neutral if it was difficult to identify tone.

The prominence of each article was coded according to placement



(e.g., front page), section (e.g., editorial section), and length. In terms of framing, articles were coded as episodic, thematic, or both. 14,15 From a public health perspective, thematic frames are generally preferred because they focus on community response and emphasize program needs. Articles with episodic themes as well as thematic frames were coded as "both."

Articles were coded according to health context ¹⁶ if they contained elements such as quotations from health professionals, discussions of diseases or injuries, or information derived from health agencies or related organizations. Articles were coded as having a disaster policy focus if they discussed the creation or passage of or changes in disaster policies.

RESULTS

Of the 1590 articles analyzed, 52% were published by the local newspapers (the *Advocate* and the *Times Picayune*) and 48% were published by the national newspapers (the *New York Times* and the *Washington Post*).

Public Health Disaster Management Practices

Most (78%) of the 1590 articles focused on response and recovery; only 8.9% emphasized mitigation and preparation. Of the articles focusing on preparation, 65% (72 of 111) appeared in the national newspapers and only 35% (39 out of 111) were published in the local papers (Table 1). A higher proportion of articles on mitigation and preparation

TABLE 1—Primary Focus of Hurricane Katrina Articles in 4 National and Local Newspapers: August and September 2006

		Article Focus					
	Total No. of Articles	Death or Injury, No. (%)	Destruction, No. (%)	Mitigation, No. (%)	Preparation, No. (%)	Response, No. (%)	Recovery, No. (%)
New York Times	326	7 (2.1)	38 (11.7)	10 (3.1)	26 (8)	155 (47.5)	90 (27.6)
Washington Post	441	9 (2)	34 (7.7)	6 (1.4)	46 (10.4)	95 (21.5)	242 (54.9)
Advocate	429	8 (1.9)	41 (9.6)	8 (1.9)	21 (4.9)	159 (37.1)	192 (44.8)
Times Picayune	394	13 (3.3)	39 (9.9)	7 (1.8)	18 (4.6)	159 (40.4)	157 (39.8)
Total	1590	37 (2.3)	152 (9.6)	31 (1.9)	111 (7)	568 (35.7)	681 (42.8)

(44 of 142, or 31%) than on recovery and response (166 of 1247, or 13%) appeared on the front page of the papers.

An examination of primary focus within the context of the disaster time line showed an average of 2.5 articles per day before the storm hit. During the storm, the average increased to 28 articles per day. A comparison of focus based on the evolution of the disaster showed that 15% of articles focused on preparation, 3% on mitigation, 3% on

response, and 1% on recovery (Table 2). After the hurricane, local articles emphasized disaster response, whereas national articles emphasized recovery. The majority of the articles were produced after the storm, with a daily average of 58 articles among the 4 newspapers between August 31 and September 25. The highest numbers of published articles appeared on Thursdays through Sundays, even if prominent events occurred on other days of the week.

TABLE 2—Numbers of Articles, by Perspectives on Public Health Before, During, and After Hurricane Katrina in 4 National and Local Newspapers: August and September 2006

	Prehurricane (August 25-28)	Hurricane on Land (August 29-30)	Posthurricane (August 31- September 25)	Total
Preparation ^a	3	14	94	111
Mitigation ^a	0	1	30	31
Response	1	18	549	568
Recovery ^a	2	7	672	681
Death/injury	1	1	35	37
Destruction	3	16	133	152
Total	10	56	1512	1590

 a Public health disaster management practices; significant differences (P<.001) between numbers in prehurricane, hurricane on land, and posthurricane columns.

Focus of Responsibility

Of the 1590 articles analyzed, more than 40% focused on the accountability of the federal government. The federal government, as opposed to individuals, families, or local governments or agencies, was identified as the entity most needing to respond or as already having taken responsibility. Accountability was least often (13.8%) attributed to individuals and families.

When placement of articles was analyzed as to level of responsibility, most front-page articles attributed responsibility to all levels of government. The same trend was observed for articles appearing in the editorial section.

Of the 767 New York Times and Washington Post articles, 99 (13%) appeared on the front page, whereas 668 (87%) appeared in other sections. The Washington Post published 21 more front-page articles than did the New York Times. By contrast, of the 823 local news articles published in the Advocate and the Times Picayune, 149 (18%) appeared on the front page, and 674 (82%) appeared elsewhere



in the newspaper; the *Times Picayune* published 83 more front-page articles than did the *Advocate*.

Placement of articles in the editorial section reflected each newspaper's ideological position on the issue in question. The editorial section of the *Washington Post* contained the most articles (73), followed by the editorial sections of the *New York Times* (59), the *Times Picayune* (53), and the *Advocate* (13).

Articles most often discussed the federal government as having taken responsibility (40.7%) or needing to take responsibility (8.0%) for disaster management. Front-page articles rarely mentioned a health context (0.7%). However, disaster policy was mentioned more often (4.4%)

in front-page articles than in articles appearing in other sections.

In terms of tone and taking responsibility, a positive or neutral tone was noted in articles discussing the accountability of individuals and not-for-profit organizations. The tone of articles focusing on local and state governments was primarily neutral; the tone of articles focusing on the federal government was overwhelmingly negative or neutral.

The tone of articles focusing on the need to take responsibility was neutral for individuals and for local, and state governments. Articles portrayed not-for-profit organizations with a neutral or positive tone and portrayed for-profit organizations and the federal government with a strongly negative tone (Table 3).

TABLE 3—Focus of Responsibility and Tone of Hurricane Katrina Articles in 4 National and Local Newspapers: August and September 2006

	Positive Tone, No. (%)	Neutral Tone, No. (%)	Negative Tone, No. (%)	Total, No. (%)
Took responsibility				
Individuals	101 (6.4)	103 (6.5)	16 (1.0)	220 (13.8)
Not-for-profit organizations	157 (9.9)	171 (10.8)	7 (0.4)	335 (21.1)
For-profit organizations	85 (5.3)	254 (16.0)	22 (1.4)	361 (22.7)
Local governments	49 (3.1)	212 (13.3)	40 (2.5)	301 (18.9)
State government	37 (2.3)	172 (10.8)	32 (2.0)	241 (15.2)
Federal government	52 (3.3)	349 (21.9)	246 (15.5)	647 (40.7)
Needed to take responsibility				
Individuals	6 (0.4)	30 (1.9)	9 (0.6)	45 (2.8)
Not-for-profit organizations	6 (0.4)	8 (0.5)	0 (0.0)	14 (0.9)
For-profit organizations	2 (0.1)	8 (0.5)	8 (0.5)	18 (1.1)
Local governments	1 (0.1)	18 (1.1)	8 (0.5)	27 (1.7)
State government	2 (0.1)	22 (1.4)	7 (0.4)	31 (1.9)
Federal government	3 (0.2)	61 (3.8)	63 (4.0)	127 (8.0)

Initiating, Passing, or Changing Disaster-Related Policies

Sixty-three percent of articles reflected a thematic frame: broad problems relying on institutional or government accountability (poor levies that did not meet hurricane standards). In the national papers, the government was most often the focus of the thematic frame. By contrast, episodic framing (focusing on personal, individual, and victim perspectives) accounted for only 20.2% of articles. Both thematic and episodic frames were seen in 17% of articles (Table 4).

Among the national newspapers, articles from the Washington Post were more likely to advocate for broad government responses, including policy changes; local newspapers were more likely to present problems from an individual's or victim's perspective. A significant difference in framing existed between newspapers (P < .001). These findings help validate that the articles were coded correctly given that individual responsibility is typically episodic, whereas community organization and government system responses involve more thematic leanings.

Interrater Reliability

We randomly selected 50 articles, and the coding between the 2 raters was compared. The overall level of agreement between raters was 88%. Subcategory levels of agreement were as follows: framing, 98%; health context, 90%; disaster policy, 90%; primary focus, 80%; secondary focus, 83%; taking

responsibility, 77%; and needing to take responsibility, 92%.

DISCUSSION

It is apparent from the Hurricane Katrina disaster that response systems did not or could not follow predetermined disaster plans, leading to disproportionately adverse effects among already-vulnerable citizens who could not or would not evacuate. 17,18 Thus, the media tended to emphasize a greater need for government responsibility. 19,20 Articles that emphasized government accountability were placed prominently, either on the front page or in the editorial section. These sections not only serve as prime reading sources for state and national policymakers but also provide a means through which the print media advances its organizational platform to the audience niche it most desires to reach. Forty percent of articles appeared in these highly desired sections; this was particularly the case in the Washington Post and the New York Times.

Typically, during nonturbulent times, the federal government and state governments, along with their public health systems, promote emergency preparedness in an attempt to ensure a more coordinated response. However, existing guidelines are rarely heeded. As this study affirms, media agenda setters pressed for government accountability by emphasizing disaster response and mitigation over prevention efforts.



TABLE 4—Characteristics of Disaster Management Coverage of Hurricane Katrina in 4 National and Local Newspapers: August and September 2006

	The New York Times, No. (%)	The Washington Post, No. (%)	The Advocate, No. (%)	The Times Picayune, No. (%)	Total, No. (%)
Episodic frame ^a	59 (3.7)	53 (3.3)	124 (7.8)	85 (5.3)	321 (20.2)
Thematic frame ^b	198 (12.5)	324 (20.4)	213 (13.4)	262 (16.5)	997 (62.7)
Episodic frame ^a and thematic frame ^b	68 (4.3)	64 (4.0)	92 (5.8)	46 (2.9)	272 (17.0)
Health context ^c	36 (2.3)	18 (1.1)	43 (2.7)	10 (0.6)	107 (6.7)
Policy focus ^d	46 (2.9)	27 (1.7)	47 (3.0)	13 (0.8)	133 (8.4)
Article placement					
Metro section	8 (0.5)	18 (1.1)	110 (6.9)	31 (1.9)	167 (10.5)
Business section	55 (3.5)	64 (4.0)	56 (3.5)	7 (0.4)	182 (11.4)
Editorial section	59 (3.7)	73 (4.6)	13 (0.8)	53 (3.3)	198 (12.5)

^aRefers to articles that were personal and victim focused.

For example, in the aftermath of Hurricane Katrina, the Department of Homeland Security and the Department of Health and Human Services were charged with strengthening the ability of the federal government to provide public health support and medical support.²¹ The government has an important role to play in addressing disasters; from an agendasetting perspective, however, the government in this case was shown to be primarily accountable with respect to response and recovery. Furthermore, media agenda setters minimized individual accountability by portraying preparation as not relevant or even challenging for certain populations to achieve. This is a concept that public health professionals need to amend.

Tone shapes the media's agenda. A negative tone was prominent in depictions of the

responsibility and response of the government and for-profit organizations, presumably driven by the public's perception of these entities as possessing a civic duty and having easily deployable resources. By highlighting a poor or slow response, the media was able to challenge state and federal governments to take action. The most negative tone was found in articles asserting that greater response was needed from governmental sources and for-profit businesses. Individuals and nonprofit organizations were portrayed in the most positive light, suggesting a perceived reduced level of accountability.

The media's significant attention to the government's response may have limited coverage of public health roles during this hurricane and other disasters. Only 1 in 15 articles discussed disease, injury prevention,

or public health response. One of the best public health-oriented articles analyzed, "At Risk Before the Storm Struck,"22 appeared in the Washington Post 2 weeks after Hurricane Katrina hit the Gulf Coast. It discussed how the storm affected low-income individuals suffering from chronic diseases and included a quotation from the former US surgeon general, David Satcher: "The same things that led to disparities in health in this country . . . led to disparities in the impact of Hurricane Katrina." Nonetheless, the lack of public health-oriented articles leads to the assumption that either the media does not fully recognize the role and function of a public health response or it considers establishing an agenda-setting function of greater significance than health promotion or disease prevention activities.

Journalists and public health officials differ in their perspectives on news relevance. 19,23 Iournalists focus on conflict, loss of life, property damage, and identifying the accountable party. By contrast, from a public health practitioner's view, important public health news is absence of conflict with loss of life minimized and injuries promptly treated.19 During times of disaster, these polarizing agendas clash, and "the reporter is drawn to the danger and drama, while health professionals emphasize prevention, reassurance and recovery." 19(p197) Furthermore, public health agencies have been criticized by the media because practitioners often "respond in technical terms and work within legal, scientific, and economic constraints to analyze the situation and recommend appropriate public health actions."24(p67)

Roles of Public Health Practitioners in Disasters

An understanding of the relationship between public health practitioners and the media, as well as the unique contributions they make in all phases of a large-scale emergency, can help both parties achieve their disaster-related goals. To assume that only the media is able to exert an agenda-setting influence is a mistake. Agenda setters tend to be directly or indirectly involved in mass media organizations with the primary intention of influencing policymakers on key issues. As public health continues its orientation toward population-based practices, public health professionals can tap into

^bRefers to articles that discussed broad problems and were policy oriented.

^cRefers to articles that quoted health professionals, discussed disease or injury prevention, or provided information from health-related organizations.

^dRefers to articles that discussed initiation or passage of or changes in disaster management policies.



the media and its resources to advance broad social views and promote policies and changes preventive or reactive—that will ultimately enhance health outcomes.

It is imperative that public health practitioners become knowledgeable about how the media gathers and distributes the news to assist in presenting a public health—oriented agenda. For example, practitioners at all levels should be prepared to submit public health—oriented, prevention-friendly, policy-directed media materials in the form of press releases and opinion editorials to shape and define news stories and editorial columns.

Public health practitioners should seek media relationships before, during, and after a crisis event, as summarized by Ball-Rokeach and Loges.²⁰ Prior to disasters, practitioners must design a media plan that is accessible and can be implemented in the event of a crisis. To do so, they must develop coherent, attention-getting stories regarding precautions, predictions, and policy issues. The plan must include prevention and preparedness as key messages and connect the media to experts (e.g., child psychologists) who may be available for analysis and comment in the wake of a crisis. The key is to identify and develop relationships beforehand as well as sustain relationships made during disaster coverage that may benefit future prevention-oriented media coverage.

In the wake of a disaster, the media may view public health professionals as allies who can

provide timely and reliable information. When fact-based public health messages include interesting story characteristics (who, what, where, when, why, and how), the media will be more likely to emphasize the message. Although typical public health messages may tend to relay scientific-based facts, public health professionals can add a human element through stories and examples to which the public can relate. Then, after a disaster, public health agencies should communicate their evaluations and recommendations through the media.

As reflected in the findings of this study, the media can be tenacious in seeking to influence policymakers. Conversely, policymakers rely on the media to be seen as effective managers of a crisis. Given this relationship, public health practitioners should identify policymakers with direct oversight of public health systems. With the media's help, practitioners can influence these policymakers to allocate more resources to disaster preparation or recovery, coordinate activities in the early and late phases of a disaster, and mobilize the resources of organizations, cities, counties, states, and national agencies.20

Implications for Preparedness and Response

A coordinated approach is needed to develop disaster response policies for impending and future crises. A triangulated risk communication effort between the media, the advocacyoriented arm of public health organizations, and the publicserving function of governmentsponsored health agencies will help present a single clear message to protect vulnerable populations and emphasize prevention, preparedness, and immediate-response efforts. 25,26 Such efforts will avoid confusing the public or causing an overreaction. Tinker et al.24 concluded that public health practitioners should always be ready with core messages, ensure that these messages are consistent, be willing to admit that they do not know everything, use lay language that avoids technical and bureaucratic jargon, and be sensitive to community "hot button issues."24

Limitations

Our findings are limited in that we reviewed articles for only a 1-month period surrounding the Hurricane Katrina disaster and included only 4 newspapers. In addition, previous studies on agenda setting have coded for the presence of an accompanying photograph or for headline placement above or below the fold. ProQuest did not provide information regarding such details. Hence, we were unable to assess these characteristics. We did not record numbers of excluded articles and therefore do not have information on the proportions of articles that were included.

Conclusions

Our findings, which portrayed strong media agenda setting, underscore the valuable contributions of news media to social issues surrounding disaster response and recovery; however, they also show that the media did not adequately represent key public health roles necessary before, during, and after a disaster. The focus in the Hurricane Katrina disaster was not only on reporting the news but also on ensuring that the news informed and influenced key audiences, including policymakers.

Agenda setting tends to promote disaster relief policies by reflecting on social problems retrospectively while rarely, if ever, dealing prospectively with future disasters. Clearly, the media reported that disaster response is primarily a social issue requiring broad governmental involvement, supporting the view that the government, and not individuals and communities, bears the primary responsibility in the event of a disaster. In certain circumstances, the media seems to exonerate individuals and families during a crisis when they were viewed as victims or heroes. The media helps advance the needs of vulnerable populations through policy-based messages; public health practitioners, by contrast, should strive to promote policyoriented actions.

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Contributors

M. D. Barnes codesigned and directed the study and supervised all aspects of implementation, analysis, and writing. C. L. Hanson codesigned the study and supervised and contributed to writing, analysis, and interpretation of data. L. M. B. Novilla contributed to writing and to analysis and interpretation of data. A. T. Meacham and B. C. Erickson coded all newspaper articles and contributed to analysis, writing, and the literature review. E. McIntyre contributed to interpretation of data and assisted with writing and the literature review.

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